# Surface and Data Sharing NIWG

Read-ahead Only Slides

# Surface & Data Sharing NIWG Industry Updates

## Industry Engagement

- For most of the year, Industry has been focusing on readiness for TFDM surface metering capabilities both for flight operators and airports.
- More recently, we've refocused on industry's "state of support" for the TFDM program, particularly surface metering capabilities, stemming from discussions with FAA partners.
- In November, we held two industry-only meetings to address current industry positions regarding TFDM in consideration of FAA discussions and release of the latest revision to the TFDM waterfall.

## Simplified TFDM Definitions

- TFDM Configuration A:  In essence, TFDM with surface metering capabilities. Includes Configuration B capabilities, including electronic flight strips.
- TFDM Configuration B: In essence, TFDM without surface metering capabilities. Principally electronic flight strips and associated electronic flight data exchange.

# November Industry-Only Discussions

- NIWG industry representatives continue to support TFDM's foundational capabilities, particularly electronic flight strips (EFS) and electronic flight data exchange.
  - Facilitates ATM collaboration.
  - Key capabilities for transition to information-centric NAS and ultimately trajectory-based operations.
  - If anything, consideration should be given to expanding TFDM Configuration B to additional sites (e.g., "EFS everywhere").
- Value is also seen in Configuration A surface metering capabilities, but there are concerns.
  - Limited industry engagement in latest TFDM waterfall modification—both with respect to new installations and "go-back sites".
  - Uncertainties regarding surface metering software readiness.
  - Potential for loss of industry momentum at sites where industry has worked hard to enhance readiness.
  - Concern that early implementation sites for Configuration A in the current waterfall don't represent the best opportunities for surface metering benefits.

# NIWG Recommendations

- Recommend that FAA engage industry substantively in TFDM waterfall modifications.
  - Recent implementation waterfall changes provide an opportunity for this collaboration.
  - Include consideration of expected value of benefits (magnitude + likelihood) associated with Configuration A sites. This implicitly accounts for both FAA and industry readiness, as well as the operational need for surface metering capabilities.
- Also recommend that FAA and industry (via the NIWG) engage in more formal assessment of what defines success of the TFDM program based on the current state of program implementation.

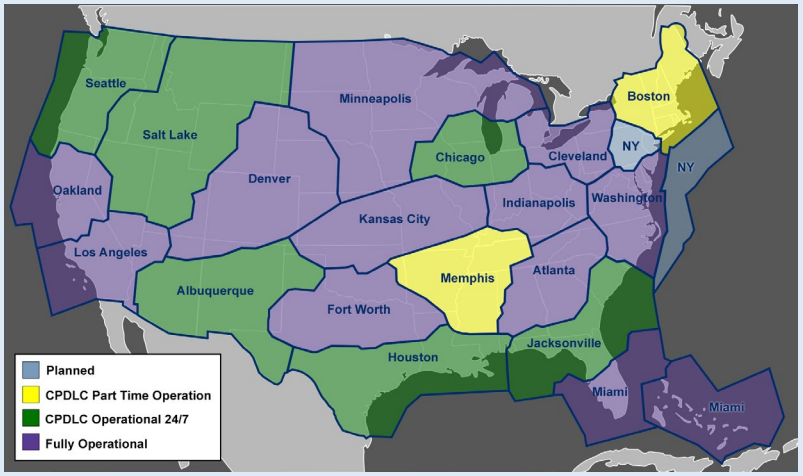
# Data Communication NIWG

Read-ahead Only Slides

# Data Comm NIWG Update (December 2024)

**En Route Data Comm Deployment**

+ 17 centers operational 24/7
+ En Route Full Services Increment 1 active at all active centers
+ Planning En Route deployment to remaining 1 center.
+ 11 centers declared IOC
+ ZBW & ZME in part time operations

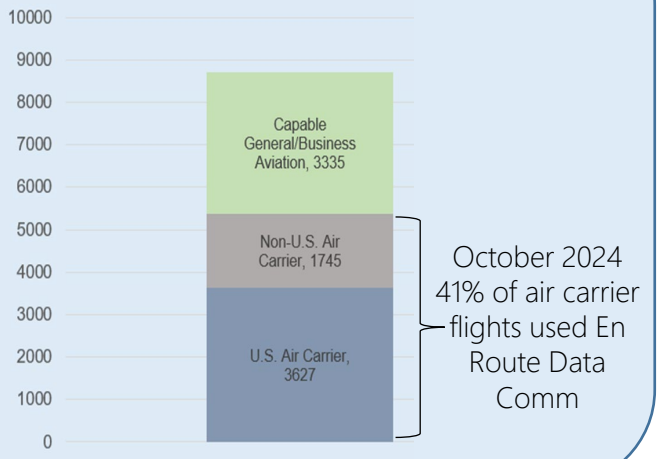



**Upcoming Center Start Date (Initial Testing):** New York: Jan 2025

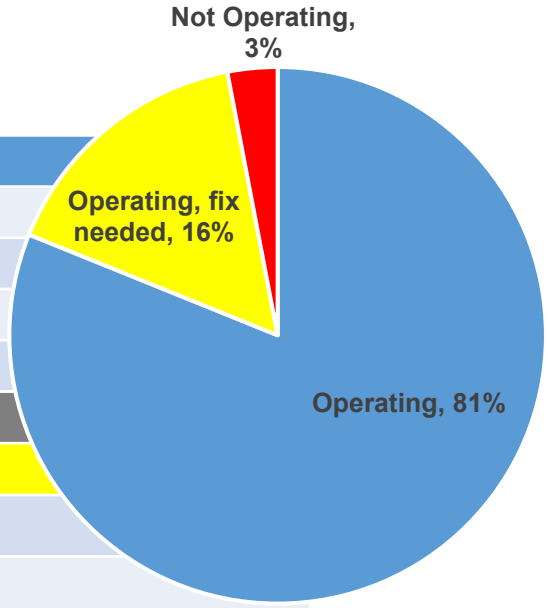
**Industry Updates**

+ 41% of En Route air carrier traffic used Data Comm in October 2024
+ Installation of avionics updates 81% complete
+ Continue to receive positive user feedback as usage grows
+ GA/BA NOTAM lifted – revised En Route participation list published November 2024

**Data Comm En Route Aircraft Equipage**



# Data Comm Avionics Updates Fleet Status




| Aircraft operating in Data Comm En Route – No Pending Actions (81%) | |
|---|---|
| **Alaska Airlines:** B737 | **JetBlue:** A21N*, A320* |
| **American Airlines:** B737, B777, B787 | **Southwest Airlines:** B737 |
| **Delta:** A330neo, A350, B737* | **United:** B737, B757, B767, B777, B787 |
| **FedEx:** B757, B767*, B777, MD11 | **UPS:** B744, MD11, B748, B757, B767 |

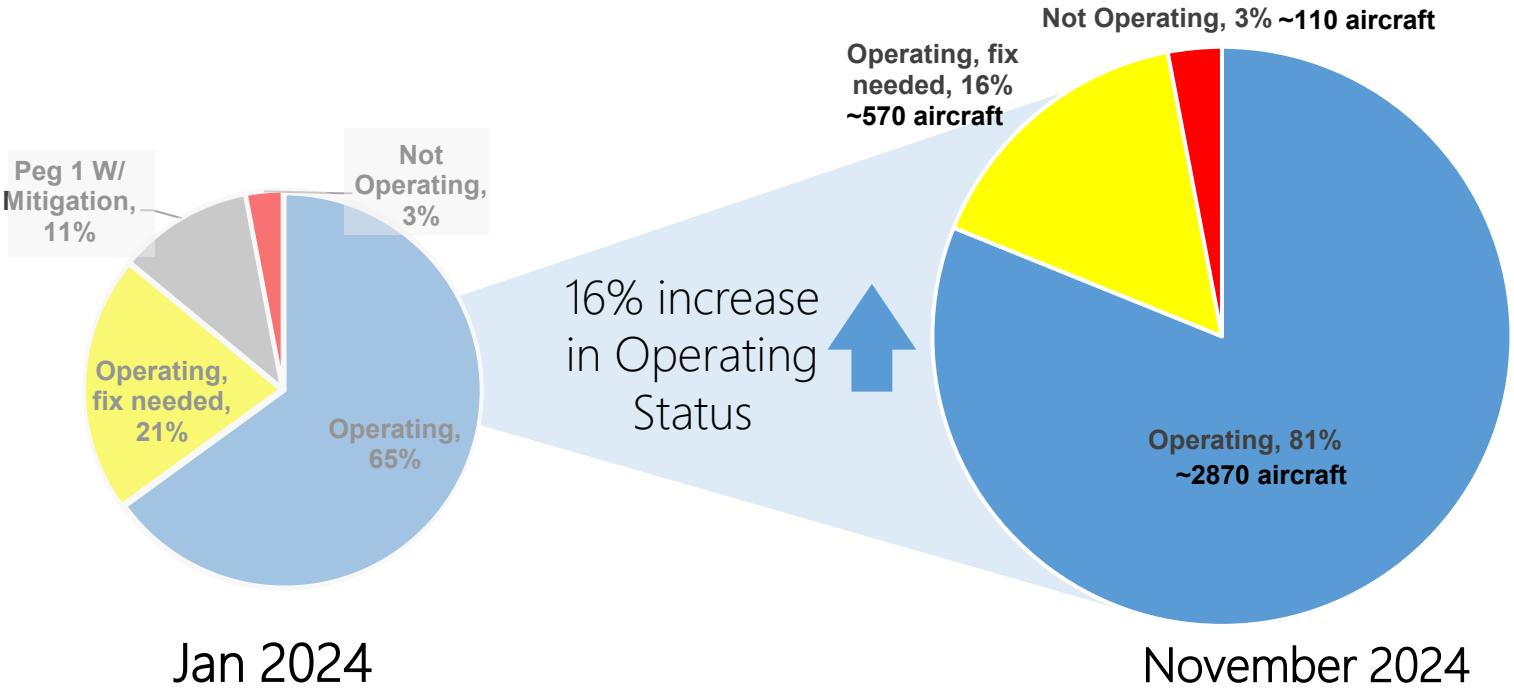
| Avionics Action | Operator/Fleet | Status |
|---|---|---|
| **Aircraft operating in Data Comm En Route with Open Avionics Actions (16%)** | | |
| Collins CMU 900 Core 16 | Delta | Delta ongoing installs |
| Boeing 767 ATN 523 (Core 16) | FedEx | SB expected late Q3 2024. |
| Airbus A320 ATSU CSB 7.5 | American (100%), Delta (100%), JetBlue (100%) | CSB 7.5 released in late 2020, technical issues increased, root caused; Fix planned for CSB 7.6 Q4 2024 (or CSB 9 available now) |
| Airbus A320 ATSU CSB 7.6 | American, Delta, JetBlue, United | CSB 7.6 planned for Q4 2024 (or CSB 9 available now) |
| **Aircraft removed from Data Comm En Route due to Open Avionics Actions (3%)** | | |
| Airbus A220 | Delta, JetBlue | Pending avionics fixes, FMS update Q4 2025; RIU update 2026 |

Note: Data above represents avionics upgrades/fixes tracked in NAC SC Ad Hoc for 8 US air carrier fleet already equipped for Data Comm.
*Denotes partial fleets

Operating, no action required | Operating fix needed | Not operating

# Data Comm 2024 Avionics Year in Review

## Avionics Fix Installation Progress (subset of equipped fleet)

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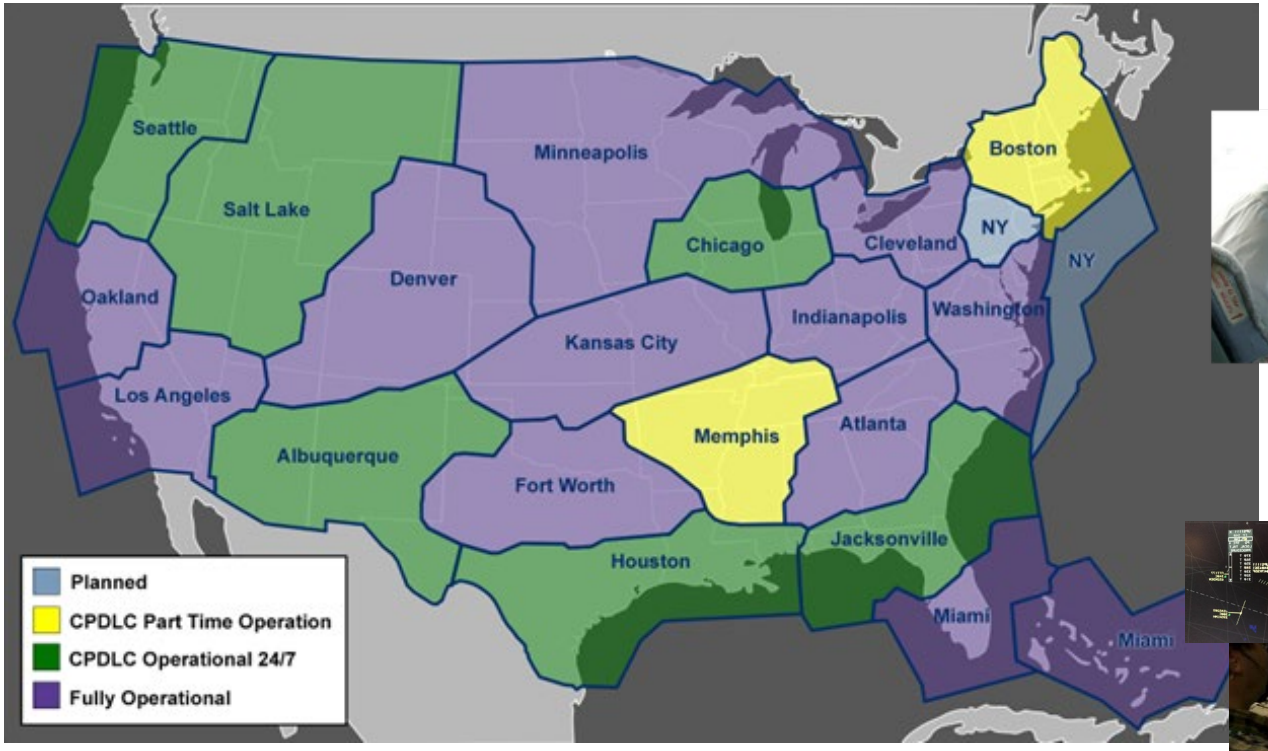
## Data Comm En Route Equipage in 2024

- +6% increase in en route air carrier IFR usage
- +65% increase in en route equipped aircraft (8,707 equipped)
  - US, Non-US, and BA/GA
- +56% increase in BA/GA aircraft using CPDLC (2,872 using)

# Data Comm Accomplishments

- Data Comm services are operational at 65 airports and 19 En Route Centers
  - 11 ARTCCs now IOC (ZDC as of 10/18). ZAB now 24/7 ops, ZBW, ZME now in limited testing.
- Data Comm user participation continues to grow – tower and en route operations reaching new highs each month
- Localized air-to-ground interop issues are being fault isolated and analyzed for needed corrective actions in the avionics and air-to-ground networks
- En Route Full services increment 1 operational at all active centers

# Data Comm Operational Status





**Air-to-Ground Network**

En Route

Tower

**Data Comm operational at 65 Towers**

**Data Comm operational 24x7 at 17 En Route Centers**

- ZMA, ZLA, ZOA, ZOB, ZDV, ZDC have recently declared IOC
- Full Services Increment 1 (Speeds / Block Altitudes) enabled at all operational sites
- ZAB, ZBW, ZME – Limited DFV

**En Route Initial Services Activation Schedule**

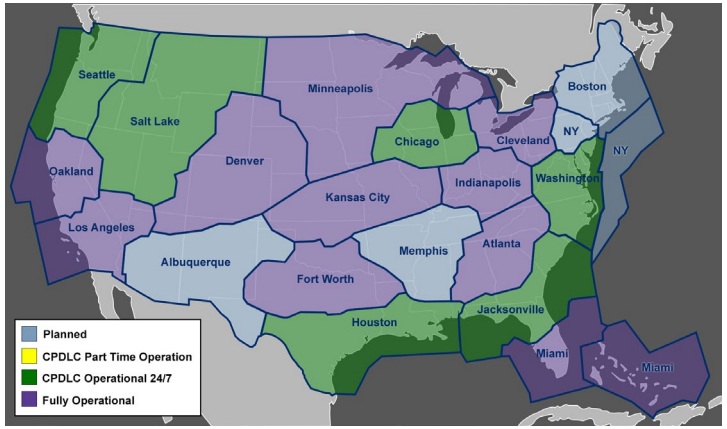
ZNY – Limited DFV (1/2025)

- ❖ Dates are tentative and subject to change

# Data Comm Benefits

## Since 2016, CPDLC DCL…

- Served 22 US Air Carriers and 104 Non-US commercial and cargo operators
- Cleared 21.34M+ flights
- Saved 4.17M+ minutes of airspace user time
- Saved 5.95M+ minutes of radio time
- Prevented 57.37M Kgs of $CO_2$ Emissions
- Prevented 316,570+ readback errors




## Since 2019, En Route Data Comm…

- Served 60 operators
- Cleared 9,089,302 flights
- Saved 7.2M+ minutes of radio time
- Prevented 1.8M+ readback errors

# 2024 Data Comm NIWG/Avionics Ad Hoc Focus Items

1. Complete nationwide en route center Data Comm deployment – Initial and Full Services
    - Provide national waterfall plan for Initial and Full Services
2. Complete installation of Data Comm avionics updates for retrofit and newly delivered aircraft
3. Continue to track progress against NextGen Joint Implementation Plan (NJIP) milestones
    - NIWG members expressed concern about the "Enhanced Services" baseline slipping to end of 2029

# Data Comm – NJIP CY19-21 Open Milestones

| Milestone | FAA /Industry | Milestone Date Q/CY | Status | Notes from July 28, 2022 NIWG Meeting |
|---|---|---|---|---|
| IOC for Initial En Route Services at all CONUS ARTCCs | FAA | ~~4Q2019~~ ~~4Q2021~~ ~~4Q2022~~ ~~4Q2023~~ ~~1Q2024~~ 2Q2025 | Milestone impacted by COVID-19 and latent avionics and air-ground interop issues; deployment restarted in March 2022 | Complete nationwide en route center Data Comm deployment – Initial and Full Services<br><br>Provide national waterfall plan for Initial and Full Services |
| Baseline additional Data Comm capabilities for En Route utilizing the existing FANS message set | FAA<br>Industry | ~~3Q2021~~ ~~3Q2024~~ ~~3Q2026~~ 4Q2029 | Due to budget impacts from COVID-19, baselining of follow-on Data Comm capabilities delayed | Data Comm initial and full services provide the foundational CPDLC features. Planning for capabilities beyond en route initial and full services continue to slip to the right.<br><br>In order to realize all potential benefits of Data Comm a continued evolution of capability is required to realize benefits of TBO. |
| Loadability Solution for Runway SID | FAA | 3Q2019 | Agreed on solution using future TFDM implementation in 2019.<br><br>TFDM deployment milestones and Loadable SID solution release are TBD. | Current TDLS system limitations prevent ATC from sending loadable Runway/SID. Today's implementation requires manual Runway/SID entry – creating opportunity for errors.<br><br>Loadable SIDs continues to be a high priority request from Data Comm users – improving efficiency and resolving human factors issues on flight deck with current implementation. |

# Data Comm NIWG Milestone Discussion

During our March 2023 meeting, Data Comm NIWG members expressed concern about the "Enhanced Services" baseline slipping to end of 2029.

With this new plan, there will a multi-year gap for additional Data Comm functionality which many operators included in their equipage business case.

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